

OSD Tri-Service Assessment Initiative Assessment Architecture

Assessment Information Model Description Version 2.3

February 7, 2000

Overview

The purpose of this paper is to provide a description of the Information Model that will be used to assess software intensive DoD programs under the OSD Tri-service Assessment Initiative. This paper describes the components of the information model and guidance on their application.

Assessment Architecture Overview

The Assessment Architecture is comprised of two primary components, the Assessment Process Model and the Assessment Information Model. These components work together to ensure that all program assessments are conducted using a consistent approach and to ensure that all potential program issues are addressed by the program assessment team.

The Assessment Process Model is comprised of seven key activities, which are described in detail in the Assessment Process Model Description document. The activities include:

- Establish and Improve Assessment Capability
- Initiate and Plan Assessment
- Perform Assessment
- Integrate and Report Assessment Results
- Evaluate Assessment Process and Results - Conduct Enterprise Analysis
- Program Technical and Management Actions
- Enterprise Technical and Management Actions

The Assessment Information Model is comprised of three primary components. The components are:

- Program Issue Structure - a typology of program issues to be addressed by the program assessment team during an assessment. The issue structure defines an issue-based framework that provides a consistent approach for assessing program issues: risks, problems and uncertainties or concerns caused by a lack of information. It is used in conjunction with the Assessment Process to ensure that applicable issues are identified and assessed throughout all process activities, providing increasing insight into the issues that exist on a given program.

The Program Issue Structure provides a consistent starting point for identifying, assessing, and correlating program issues. An overview of Version 2.3 of the structure is provided in Figure 1, and the full structure is found in Appendix A. It is intended that the structure is augmented and tailored as the program situation, characteristics and issues dictate.

<u>Issue Category</u>	<u>Issue</u>	<u>Sub-Issue</u>
1.0 Environment	1.1 Regulatory Environment	1.1.1 Legal
		1.1.2 Policy
		1.1.3 Reviews / Audits / Assessment
	1.2 Workplace Environment	1.2.1 Cooperation
		1.2.2 Morale
		1.2.3 Culture
	1.3 Political Environment	1.3.1 Legislative Agendas
		1.3.2 Customer's Agenda
		1.3.3 Supplier's Agenda
2.0 Mission Requirements	2.1 Operational Requirements	2.1.1 Reasonableness 2.1.2 Stability 2.1.3 Dependencies 2.1.4 Change Tolerance
3.0 Financial	3.1 Funding	3.1.1 Sufficiency
		3.1.2 Timeliness
		3.1.3 Continuity / Stability
		3.1.4 Flexibility
	3.2 Budget	3.2.1 Allocation
		3.2.2 Variance
4.0 Resources	4.1 Personnel	3.3.3 Control
		4.1.1 Qualifications
		4.1.2 Staffing
	4.2 Facilities	4.1.3 Availability
		4.2.1 Capital Equipment
	4.3 Tools	4.2.2 Infrastructure
		4.3.1 Support Tools
	4.4 Government Furnished	4.3.2 Information Systems
		4.4.1 Equipment
	4.5 Supplier Furnished	4.4.2 Information
		4.5.1 COTS
		4.5.2 Non-Developed Items (NDI)
	4.6 Prime Contractor / Supplier	4.5.3 Developed Items (DI)
		4.6.1 Integrity
	4.7 Subcontractors / Vendors	4.6.2 Longevity
		4.7.1 Integrity
		4.7.2 Longevity
		4.7.3 Dependencies

Table 1. Information Model – Issue Structure

<u>Issue Category</u>	<u>Issue</u>	<u>Sub-Issue</u>
5. Management	5.1 Acquisition Strategy/Process	5.1.1 Acceptability 5.1.2 Feasibility 5.1.3 Suitability
	5.2 Project planning	5.2.1 Acceptability 5.2.2 Feasibility 5.2.3 Suitability
	5.3 Program & Project Management	5.3.1 Organization 5.3.2 Suitability 5.3.3 Change Tolerance
	5.4 Contracting and Subcontracting	5.4.1 Conditions / Constraints 5.4.2 Cost Accounting 5.4.3 Progress Tracking 5.4.4 Arrangements 5.4.5 Timeliness 5.4.6 Change Management
	5.5 Communication	5.5.1 Interfaces 5.5.2 Openness 5.5.3 Teamwork
6. Technical Process	6.1 Conformance	6.1.1 Compliance 6.1.2 Performance Consistency 6.1.3 Process Consistency
	6.2 Capability	6.2.1 Fitness for Purpose 6.2.2 Efficiency 6.2.3 Enhancement
7. Technical Product	7.1 Product Line	7.1.1 Architecture 7.1.2 Scale 7.1.3 Complexity 7.1.4 Technology Effectiveness 7.1.5 Interoperability
	7.2 Product Requirements	7.2.1 Completeness 7.2.2 Correctness 7.2.3 Feasibility 7.2.4 Stability
	7.3 Quality	7.3.1 Usability 7.3.2 Technical Performance 7.3.3 Dependability / Reliability / Availability 7.3.4 Supportability / Maintainability 7.3.5 Reusability 7.3.6 Portability 7.3.7 Efficiency
	7.4 Product Risk	7.4.1 Human Factors 7.4.2 Safety 7.4.3 Security

Table 1. Information Model – Issue Structure (cont.)

<u>Issue Category</u>	<u>Issue</u>	<u>Sub-Issue</u>
8.0 Schedule	8.1 Progress	8.1.1 <i>Estimation Accuracy</i>
		8.1.2 <i>Visibility</i>
		8.1.3 <i>Progress Performance</i>
		8.1.4 <i>Rework</i>
9. User/Customer	8.2 Dependencies	8.2.1 <i>Complexity</i>
		8.2.2 <i>Contingency</i>
	9.1 Satisfaction	9.1.1 <i>Involvement</i>
		9.1.2 <i>Usability</i>
10. Project Specific	9.2 Transition	9.2.1 <i>Transition Support</i>
		9.2.2 <i>Training</i>
	10.1 User Defined	10.1.1 <i>User Defined</i>

Table 1. Information Model – Issue Structure (cont.)

- Library of Assessment Tools and Techniques - a collection of assessment tools, techniques, and references that support the detailed analysis of one or more program issues. The library provides the appropriate resources required by the program assessment teams to identify and assess individual program issues. These resources are mapped to the Program Issue Structure. Based on this mapping, each program assessment team selects and applies the assessment resources that best address the identified program issues.
- Issue Analysis Guidelines - guidance for prioritizing, analyzing, and relating identified program issues. The guidelines provide a defined methodology for identifying, prioritizing, assessing, and correlating program issues. It also addresses the generation of actionable recommendations.

(Note: The Library of Assessment Tools and Techniques and the Issue Analysis Guidelines are currently under development.)

Program Issue Structure: Primary Issue Categories

The primary issue categories are used to capture the high-level concerns (risks, problems and uncertainties/lack of information) generated during the assessment. They are applicable to the whole effort being assessed, i.e., the organizational, systems and software aspects of a project, program or enterprise.

The issues are dynamic and multi-dimensioned in nature. This means that an issue will change dependent on time (e.g., life cycle phase), stakeholder perspective (e.g., customer or supplier), priority of importance, triggering event

(i.e., the event(s) that initiated the issue), and the objectives, assumptions and constraints that exist when the issue is being examined.

Program Issue Structure Application

The list of issues is not meant to be exhaustive, but rather a *minimum* set of concerns that the Assessment Team Lead and team members should survey to help initiate and sustain the assessment. Further, the issues are only described in general terms and are not intended to cover the specifics of every possible situation the team may find itself assessing. It is not expected that will every issue necessarily be used during an assessment. However, it is assumed that each of the issues will be at least be reviewed by the program assessment team as part of the issue identification process.

Moreover, it is not expected that every team member will be an expert in every issue area. However, the team as a whole should be, and thus should be able to relate the general issue descriptions to the specific circumstances of the effort under assessment.

Additionally, some issues necessarily overlap or are repeated because of certain items that require emphasis based upon a presumed perspective or triggering event. Again, the issues should be used as a starting point only, and be supplemented with other domain specific questionnaires, surveys, taxonomies, personal experience, etc., as the situation requires. A “Project Specific” issue category exists to allow an assessment team to add new issues to the structure where required.

Each issue category, issue and “sub-issue” define a general “scope” or boundary to consider. This information is used to help create the appropriate assessment context.

Further, each sub-issue has a customer and supplier perspective from which the issue may be assessed. Many times the assessment guidance provided in the perspectives are nearly identical, but sometimes they are not. For example, the political agendas of the customer and supplier may be very different from one another, while their ability to hire personnel may be very similar. Be aware that even when a sub-issue’s perspectives appears the same, the actions or recommendations to address the issue may be very different because of the unique perspective involved.

The guidance provided follows a convention where the word “evaluate” is used to examine things that are factual in nature, i.e.; they can be objectively measured. The word “contrast” is used to try to show differences, while “compare” is meant to convey similarities. The word “assess” is used to render some sort of judgment.

Finally, the Team Leader should endeavor to look for issues beyond this list to reduce the possibility of “issue blindness”, i.e., seeing only what is on the list of issues.

Appendix A

OSD Tri-Service Assessment Initiative

Program Issue Structure

Version 2.3

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Issue Structure

1. Environment

Scope: This issue category concerns the context in which the project or enterprise operates, the boundaries that constrain it, and any externalities that may influence it.

1.1 Regulatory Environment

Scope: This issue concerns the regulatory constraints under which the project or enterprise operates.

1.1.1 Legal

Scope: The effort's compliance with international, federal and state laws.

Customer Perspective: Examine general legal constraints, impacts of FAR regulations, and potential changes in legislation. Evaluate the effort's compliance with appropriate legal requirements. Assess whether the level of compliance is acceptable.

Supplier Perspective: Examine legal requirements imposed on the effort. Evaluate copyrights, patents, trade secrets or intellectual property rights. Assess the impact of non-compliance with or changes to the legal requirements.

1.1.2 Policy

Scope: The current governmental policies and industry standards that influence the effort's acquisition, development, operational or sustaining engineering.

Customer Perspective: Examine policy constraints, congressional mandates, policy that may be changing, and/or policies that mandate the use of specific technology solutions. Evaluate these policies for consistency. Assess whether these policies have any implications on the effort.

Supplier Perspective: Examine internal corporate policies (e.g., purchasing, finance, personnel administration, labor, at contract "at risk" policies) as well as governmental policies. Evaluate the constraints these policies place on the effort. Assess the impact of changes in policy.

1.1.3 Reviews/Audits/Assessments

Scope: The compliance with previous external and internal reviews/audits/assessments performed on the effort.

Customer Perspective: Examine previous reviews/audits/assessments (e.g., milestone reviews, GAO assessments, etc.) and those performed on projects of a similar nature. Evaluate the recommendations and their implementations, which recommendations were not followed, and the rationale for not following the recommendations. Assess the adequacy of the previous reviews/audit/assessments and their recommendations.

Supplier Perspective: Examine previous reviews/audits/assessments. Evaluate the recommendations and their implementations, which recommendations were not followed, and the rationale for not following recommendations. Assess the validity and/or impacts of not following previous recommendations (e.g., the likelihood of passing the next major milestone review).

1.2 Workplace Environment

Scope: This issue concerns the general situation existing within the stakeholders' workplace.

1.2.1 Cooperation

Scope: The level of teamwork existing among the effort's stakeholders.

Customer Perspective: Examine the work agreements in place, the teamwork that exists, including cooperation within internal groups. Evaluate the willingness to compromise, the number and types of confrontations that occur (e.g., between customer and sponsor, customer and supplier), the conflict resolution process, and cooperation received from supplier as well as projects/programs which with the effort must interface. Assess whether the level of cooperation is acceptable.

Supplier Perspective: Examine the work agreements in place and the level of teamwork that exists. Evaluate the acceptance of reasonable direction and instructions from customer or other parties, the degree of commitment to effort by the stakeholders, the general openness towards resolving problems and risks. Evaluate the cooperation that exists within the organization (e.g., with corporate headquarters) as well as among subcontractors/vendors. Assess the impact of changes in the level of cooperation on the effort.

1.2.2 Morale

Scope: The degree of enthusiasm and commitment that exists among the effort's stakeholders.

Customer Perspective: Examine the morale of the effort's stakeholders. Evaluate the personnel turnover rate, leadership visibility, the number of crisis management meetings, the number of changes in schedule. Assess whether the morale is acceptable.

Supplier Perspective: Examine the morale of the effort's stakeholders. Evaluate the personnel turnover rate, the current reputations of the stakeholders, the productivity levels, the promptness of remedial actions. Assess the impacts of a change in morale on the effort.

1.2.3 Culture

Scope: The unwritten rules of organizational behavior that exist within the effort's stakeholders that may influence the success of the effort.

Customer Perspective: Examine the organizational culture (customer and supplier). Evaluate their organizational assumptions, how decisions are made, unwritten codes

of behavior, and where power resides. Assess whether the varied organizational cultures support the effort or whether culture incompatibilities will ensue.

Supplier Perspective: Examine the organizational cultures (customer, supplier, vendors, and subcontractors). Evaluate their codes of conduct, vision statements, what is socially valued, internal paths leading to success. Assess the impacts of changes or incompatibilities in cultural.

1.3 Political Environment

Scope: This issue concerns the general situation existing within the overall political environment.

1.3.1 Legislative Agendas

Scope: Current and pending legislation, a sense of Congress or other legislative bodies or institutions that may influence the effort's success.

Customer Perspective: Examine current and pending legislation. Evaluate the potential impacts of pending/proposed legislation, congressional or related support (e.g., lobbying groups, newspapers, think tanks) on the effort. Assess whether the legislative agendas support the effort.

Supplier Perspective: Examine the potential impacts of pending/proposed legislation; congressional or other support. Assess the impacts of changes in legislative agendas on the effort.

1.3.2 Customer's Agenda

Scope: The political objectives of effort's customer and/or sponsor.

Customer Perspective: Examine political objectives of the customer, the customer's sponsor, SETA contractors and consultants. Compare and contrast their respective political objectives. Evaluate the actions of the sponsors to safeguard the effort and willingness to champion the effort. Assess whether the agendas support the customer's agenda for the effort.

Supplier Perspective: Examine the customer's agenda. Evaluate impact of the customer's (or supporting contractors) political goals conflicting with the technical goals of the effort. Assess the impact of changes in the customer's agendas.

1.3.3 Supplier's Agenda

Scope: The political (market and economic) objectives of the effort's supplier and other team members.

Customer Perspective: Examine the supplier's (and its subcontractors) agenda. Evaluate the influence of the supplier on international or political environment, the economic strength of supplier, the current competitive environment, the supplier's long and short-term market/financial goals. Assess whether the supplier's agenda support the customer's agenda.

Supplier Perspective: Examine all the stakeholders' agendas. Compare and contrast the political and economic goals of supplier and team members against

technical/customer's goals for project. Evaluate the actions of the supplier to safeguard the effort and champion the effort (e.g., risk sharing). Assess the impacts of agenda conflict or changes in anyone's agenda.

2. Mission Requirements

Scope: This issue category concerns how well a mission requirement can be supported or the validity of a mission-related capability against a threat.

2.1 Operational Requirements

Scope: This issue concerns the forces that can influence the mission requirement.

2.1.1 Reasonableness

Scope: The operational requirements; the effort's technical approach.

Customer Perspective: Examine the operational requirements. Assess the reasonableness of the requirements. Assess whether the implementation is reasonable given the proposed technology and acquisition, development and/or support approach.

Supplier Perspective: Examine the operational requirements. Assess the reasonableness of the requirements. Assess whether the implementation is reasonable given the proposed technology and acquisition, development and/or support approach. Assess the impact of operational requirement changes to the reasonableness of the effort.

2.1.2 Stability

Scope: The stability of the operational requirements.

Customer Perspective: Examine the threat environment, operational doctrine, legislation, and/or operational & test feedback. Evaluate each for changes (e.g., threat projections, pending doctrinal changes, interoperability requirements, legislative proposals) that might modify the mission requirements. Assess the impact of operational requirements change/volatility on the effort.

Supplier Perspective: Examine the threat environment, operational doctrine, legislation, and/or operational & test feedback. Evaluate each for change (e.g., pending doctrinal changes, interoperability requirements, legislative proposals) that might modify the mission requirements. Assess the impact of operational requirements change/volatility on the effort's functionality, cost and schedule.

2.1.3 Dependencies

Scope: The impact of external dependencies on the operational requirements.

Customer Perspective: Examine operational requirements. Evaluate their dependency on the existence of other mission requirements (e.g., those provided by other platforms.) Assess the impact of changes in mission requirements on the effort and/or by the effort on other missions.

Supplier Perspective: Examine operational requirements. Evaluate their dependency on the existence of other mission requirements (e.g., those provided by other platforms.) Assess the criticality of this dependency on the capability to support the effort's mission.

2.1.4 Change Tolerance

Scope: The capability of the effort to manage the impacts of changes to the mission requirements.

Customer Perspective: Examine the risk management, change management, requirements management, and rework procedures. Assess their robustness. Assess whether they can smoothly handle a change in mission requirements.

Supplier Perspective: Examine the risk management, change management, requirements management, and rework procedures. Assess their robustness. Assess whether they can smoothly handle a change in mission requirements.

3.0 Financial

Scope: This issue category concerns the process of monetary control being exercised over the effort.

3.1 Funding

Scope: This issue concerns the process involved in funding the effort.

3.1.1 Sufficiency

Scope: The amount of funding available for the effort; the support for continued funding of the effort.

Customer Perspective: Examine the funding profile and expenditure rates. Evaluate the adequacy of the funding amounts against the effort's objectives. Assess the continued funding support of effort by sponsors. Assess whether the funding and support are acceptable.

Supplier Perspective: Examine the funding received. Evaluate its adequacy against contractual requirements and obligations. Assess any impacts of funding slow-down and/or reductions. Assess the impacts of changes in the support of effort by customer and internal sponsors.

3.1.2 Timeliness

Scope: The funding profile and timeline.

Customer Perspective: Examine the funding profile and timeline. Compare and contrast the funding timeline against contractual requirements and expenditures. Evaluate whether the funding profile maps to when the resources are required, factoring in lead times. Assess the adequacy of the timeline's fit against the requirements and expenditures.

Supplier Perspective: Examine the funding profile and timeline. Compare and contrast the funding timeline against contractual requirements and expenditures. Assess the impacts of changes in the funding timeline on current contractual requirements and liabilities (e.g., cashflow requirements).

3.1.3 Continuity/Stability

Scope: The funding profile and timeline.

Customer Perspective: Examine the funding profile and timeline. Evaluate the continuity and stability of the funding profile. Assess whether the continuity/stability of the funding is acceptable.

Supplier Perspective: Examine the funding profile and timeline. Evaluate the continuity/steadiness of the funding profile. Assess the impacts of changes in continuity/stability (e.g., a sudden reprogramming of the funding) against effort's cost, schedule, technical objectives.

3.1.4 Flexibility

Scope: The funding profile, timeline, funding process and the type (i.e., “color”) of funding available.

Customer Perspective: Examine the funding profile, timeline, funding process and funding type. Evaluate the capability to reallocate or transfer funding. Assess whether there is sufficient funding flexibility.

Supplier Perspective: Examine the funding profile, timeline and process. Evaluate the capability to absorb changes to funding. Assess the impacts of changes in funding profile on the effort.

3.2 Budget

Scope: This issue concerns the process of budgetary control exercised over the effort.

3.2.1 Allocation

Scope: The budgetary process and disbursements.

Customer Perspective: Examine the budgetary process and disbursements. Evaluate the appropriateness of the funding allocation (e.g., the allocation of funding to subcontractors) as well as the value for money spent. Contrast the allocation against current and proposed work. Assess whether the allocation is acceptable.

Supplier Perspective: Examine the budgetary process and disbursements. Compare and contrast the current and proposed work against budget allocations and expenditures. Assess mix and balance of the allocations against the work performed. Assess the impact of changes to the allocation mix (e.g., a funding shortfall).

3.2.2 Variance

Scope: The budgeting process and expenditures.

Customer Perspective: Examine the budgeting process and expenditures. Evaluate the accuracy and precision of the budgetary expenditures. Contrast the funding against expenditures. Assess the impact of any variance in estimated versus actual budget. Assess whether the accuracy of the budget is acceptable.

Supplier Perspective: Examine the budgeting process and expenditures. Contrast the funding against expenditures. Assess the impact of any variance in estimated versus actual budget. Assess the impact of changes in the budgetary information.

3.2.3 Control

Scope: The budgetary process and expenditures.

Customer Perspective: Examine the budgetary control process. Evaluate how funds are spent, monitored and reported. Assess whether the financial controls are acceptable.

Supplier Perspective: Examine the budgetary control process. Evaluate how funds are spent, monitored and reported. Assess the impacts of changes to the financial control process.

4.0 Resources

Scope: This issue category concerns the assets needed and available to meet the effort's objectives, including but not limited to personnel, facilities, training, etc.

4.1 Personnel

Scope: This issue concerns the quality of the expertise available to the effort.

4.1.1 *Qualifications*

Scope: The relevant knowledge, experience and training of the personnel assigned to the effort.

Customer Perspective: Examine the expertise of the personnel (customer and supplier) assigned to the effort. Contrast the relevance of the expertise, domain knowledge, and training against effort's needs. Assess the adequacy of the expertise.

Supplier Perspective: Examine the expertise of the supplier personnel assigned to the effort. Contrast the relevance of the expertise, domain knowledge, and training against effort's needs. Assess the impacts of any change in the level of expertise.

4.1.2 *Staffing*

Scope: The staffing profile.

Customer Perspective: Examine staffing profile. Evaluate the customer and supplier staffing. Compare and contrast the staffing adequacy, mix, turnover, apportionment balance, and timeliness of staffing against current and proposed work. Assess the adequacy of the staffing profile.

Supplier Perspective: Examine staffing profile. Compare and contrast the staffing adequacy, mix, turnover, apportionment balance, and timeliness of staffing against current and proposed work. Assess whether the personnel bid are assigned to the effort. Assess any changes in the staffing profile.

4.1.3 *Availability*

Scope: The current economic/organizational situation in regard to personnel supply and demand.

Customer Perspective: Examine the competitive marketplace as well as constraints on personnel availability (e.g., personnel ceilings, promotion ceilings, internal competition for qualified personnel, etc.). Evaluate the availability of qualified personnel to support the effort (customer and supplier). Assess whether there exists an ability to hire and retain qualified personnel.

Supplier Perspective: Examine the competitive marketplace. Evaluate the availability of qualified personnel to support the effort (e.g., experienced Ada programmers). Assess the ability to hire and retain qualified personnel. Assess the circumstances

that support or negatively impact the ability to put together a qualified team of people. Assess the impacts of changes in the marketplace.

4.2 Facilities

Scope: This issue concerns the organizational technology, e.g., plant and machinery, required for supporting the effort.

4.2.1 Capital Equipment

Scope: The profile of the capital equipment required in supporting the effort.

Customer Perspective: Examine the capital equipment provided. Contrast the equipment against the effort's requirements. Assess whether the capital equipment is sufficient.

Supplier Perspective: Examine the capital equipment provided. Contrast the equipment against the effort's requirements. Assess the impacts of any changes in capital requirements.

4.2.2 Infrastructure

Scope: The infrastructure required for supporting effort.

Customer Perspective: Examine the infrastructure provided (e.g., office space, facilities, etc.). Contrast the infrastructure against the effort's requirements. Assess whether the infrastructure is adequate.

Supplier Perspective: Examine the infrastructure provided. Contrast the infrastructure against the effort's requirements. Assess the impacts of changes in infrastructure.

4.3 Tools

Scope: This issue concerns the range of supporting tools, techniques, etc., required for supporting the effort.

4.3.1 Support Tools

Scope: The range of tools required for acquiring, developing or maintaining the effort.

Customer Perspective: Examine the support tools provided. Contrast the tools functional match against the effort's requirements. Assess whether the tools provided are sufficient in number and quality.

Supplier Perspective: Examine the support tools provided. Contrast the tools against the effort's requirements. Assess the level of trained personnel on the tools. Evaluate if the tools provided are sufficient in number and quality. Assess the impacts of any changes in development tools.

4.3.2 Information Systems

Scope: The information systems required in supporting the effort.

Customer Perspective: Examine the information systems provided that support the effort (e.g., MIS, financial accounting, communications/information capture including web-based capabilities). Assess their adequacy against both the customer and supplier's requirements to manage the effort.

Supplier Perspective: Examine the information systems provided that support the effort (e.g., MIS, financial accounting, communications including web-based capabilities). Evaluate their adequacy against the effort's needs. Assess the impacts of information system changes.

4.4 Government Furnished

Scope: This issue concerns the items available from the government that are being used (or planned for use) in the effort.

4.4.1 Equipment

Scope: The government furnished equipment required to support the effort.

Customer Perspective: Examine the GFE provided. Compare and contrast GFE against the effort's requirements. Evaluate its availability, reliability, maintainability, supportability, etc. Assess whether the GFE used is adequate.

Supplier Perspective: Examine the GFE provided. Compare and contrast the GFE against the effort's requirements. Evaluate its availability, reliability, maintainability, supportability, etc. Assess the impacts of any changes in GFE.

4.4.2 Information

Scope: The government furnished information required to support the effort.

Customer Perspective: Examine the GFI provided. Compare and contrast the GFI against the effort's requirements. Evaluate its availability, accuracy, reliability, etc. Assess whether the GFI is adequate.

Supplier Perspective: Examine the GFI provided. Compare and contrast the GFI against the effort's requirements. Evaluate its availability, accuracy, reliability, etc. Assess the impact of changes in GFI.

4.5 Supplier Furnished

Scope: This issue concerns the items available from the supplier that are being used (or planned for use) in the effort.

4.5.1 Commercial Off-The-Shelf (COTS)

Scope: The commercial off-the-shelf equipment/software required in support of the effort.

Customer Perspective: Examine the COTS being used. Compare and contrast the COTS against the effort's requirements. Evaluate its availability, reliability, supportability, etc. and any data rights issues. Assess its position in the marketplace and evaluate its longevity. Assess the adequacy of the COTS used.

Supplier Perspective: Examine the COTS being used. Contrast the COTS against the effort's requirements. Evaluate its availability, reliability, supportability, etc., and any data rights issues. Assess its position in the marketplace and evaluate its longevity. Assess the impacts of any changes in COTS use.

4.5.2 Non-Developed Items (NDI)

Scope: The non-developed items (excluding COTS) required in support of the effort.

Customer Perspective: Examine NDI the being used (e.g., a unique, once developed software/hardware item that is not available on the open market). Compare and contrast the NDI against the effort's requirements. Evaluate its availability, reliability, supportability, etc., as well as any data rights issues. Assess the adequacy of the NDI used.

Supplier Perspective: Examine the NDI being used. Contrast the NDI against the effort's requirements. Evaluate its availability, reliability, supportability, etc., as well as data rights issues. Assess the impacts of any changes in NDI use.

4.5.3 Developed Items (DI)

Scope: The developed items required in support of the effort.

Customer Perspective: Examine the DI being used. Compare and contrast the DI against the effort's requirements. Evaluate its availability, reliability, supportability, etc. Assess the adequacy of the DI used.

Supplier Perspective: Examine the DI being used. Contrast the DI against the effort's requirements. Evaluate its availability, reliability, supportability, etc. Assess the impacts of any changes in DI use.

4.6 Prime Contractor/Supplier

Scope: This issue concerns how the prime contractor/supplier influences the effort.

4.6.1 Integrity

Scope: The prime contractor/supplier being used on the effort

Customer Perspective: Examine the prime contractor/supplier. Evaluate its history, economic viability, reputation and past performance. Assess the likelihood of meeting its commitments. Assess whether its integrity is acceptable.

Supplier Perspective: Examine the prime contractor/supplier. Evaluate its history, economic viability and reputation and past performance. Assess the likelihood of meeting its commitments and expectations. Assess the impact of changes in the prime contractor/supplier meeting its commitments/expectations.

4.6.2 Longevity

Scope: The prime contractor/supplier being used on the effort.

Customer Perspective: Examine the prime contractor/supplier. Evaluate its history, economic viability and past performance. Assess its likelihood of staying in business. Assess whether its longevity potential is acceptable.

Supplier Perspective: Examine the prime contractor/supplier. Evaluate its history, economic viability and performance. Assess its likelihood of staying in business. Assess the impact of changes in the prime contractor/supplier.

4.7 Subcontractors / Vendors

Scope: This issue concerns how indirect or third parties can influence the effort.

4.7.1 Integrity

Scope: The subcontractors/vendors being used on the effort

Customer Perspective: Examine the subcontractors/vendors. Evaluate their history, economic viability, reputation and past performance. Assess the likelihood of meeting their commitments. Assess whether their integrity is acceptable.

Supplier Perspective: Examine the subcontractors/vendors. Evaluate their history, economic viability and reputation and past performance. Assess the likelihood of meeting their commitments and supplier expectations. Assess the impact of changes in the subcontractors/vendors meeting their commitments/expectations.

4.7.2 Longevity

Scope: The subcontractors/vendors being used on the effort.

Customer Perspective: Examine the subcontractors/vendors. Evaluate their history, economic viability and past performance. Assess their likelihood of staying in business. Assess whether their longevity potential is acceptable.

Supplier Perspective: Examine the subcontractors/vendors. Evaluate their history, economic viability and performance. Assess their likelihood of staying in business. Assess the impact of changes in subcontractors/vendors.

4.7.3 Dependencies

Scope: The subcontractors/vendors being used on the effort.

Customer Perspective: Examine the subcontractors/vendors used in the effort. Evaluate the effort's dependency on these vendors/subcontractors. Assess the ease of their replacement. Assess whether the dependencies are acceptable.

Supplier Perspective: Examine the subcontractors/vendors used in the effort. Evaluate the effort's dependency on these vendors/subcontractors. Assess the ease of their replacement. Assess the dependency impact of changes in subcontractors/vendors.

5. Management

Scope: This issue category concerns the capability to plan, resource, control and monitor the effort.

5.1 Acquisition Strategy/Process

Scope: This issue concerns the effectiveness of the effort's acquisition strategy and the process for implementing and sustaining the strategy.

5.1.1 Acceptability

Scope: The acquisition strategy.

Customer Perspective: Examine the acquisition strategy. Evaluate the strategy against governmental policies and laws. Assess the strategy against sponsor policy. Assess the strategy's strengths and weaknesses against the effort's objectives. Assess whether the acquisition strategy is acceptable.

Supplier Perspective: Examine the acquisition strategy. Contrast the strategy against successfully completing the effort. Assess the impacts of changes to the acquisition strategy.

5.1.2 Feasibility

Scope: The acquisition strategy, policy, process and resources; contractual management; project performance management; contract tracking; management of risk.

Customer Perspective: Examine the acquisition strategy, policy, and process. Evaluate the strategy for its ease of implementation and likelihood of success. Contrast the strengths and weaknesses of their implementation. Assess whether the acquisition strategy and process are acceptable.

Supplier Perspective: Examine the acquisition strategy, policy, and process. Assess the impact of the strategy on the day-to-day operations of the effort. Evaluate the strengths and weaknesses of their implementation. Assess the impact of changes to the acquisition strategy and process.

5.1.3 Suitability

Scope: The effort's management team; the acquisition strategy, policy, process and resources; contractual management; project performance management; contract tracking; management of risk.

Customer Perspective: Examine the acquisition strategy, policy, and process. Evaluate the capability of the management team (i.e., the customer) to implement them. Assess whether the management team is adequate.

Supplier Perspective: Examine the acquisition strategy, policy, and process. Evaluate the capability of the management team (i.e., the supplier and subcontractors) to

implement them. Assess the implications of this capability on the success of the effort. Assess the impacts of change to the management team.

5.2 Project planning

Scope: This issue concerns the effectiveness of the effort's planning approach.

5.2.1 Acceptability

Scope: The political and organizational aspects of the project plan and planning process.

Customer Perspective: Examine the project plan and planning process. Evaluate the plan against mission requirements and the customer's agendas. Contrast the plan's strengths and weaknesses. Assess the thoroughness of the planning process. Assess whether the project plan meets technical and political objectives.

Supplier Perspective: Examine the project plan and planning process. Evaluate the plan against mission requirements. Contrast the strategy's strengths and weaknesses. Assess the thoroughness of the planning process. Assess the impacts of changes made to the project plan.

5.2.2 Feasibility

Scope: The technical aspects of the project plan.

Customer Perspective: Examine the project plan. Evaluate the plan for its technical feasibility. Assess whether the project plan is technically possible.

Supplier Perspective: Examine the project plan. Evaluate the plan for its technical feasibility. Assess the impact of changes to the technical aspects of the plan.

5.2.3 Suitability

Scope: The effort's management team; the management of the project plan and planning process.

Customer Perspective: Examine the project plan and planning process. Evaluate the capability of the management team (i.e., the customer's) to implement and control them. Assess whether the management team is capable.

Supplier Perspective: Examine the project plan and planning process. Evaluate the capability of the management team (i.e., the supplier's and subcontractors') to implement and control them. Assess the implications of this capability on the success of the effort. Assess the impact of changes to the management team.

5.3 Program and Project Management

Scope: This issue concerns the capability of the program and project management.

5.3.1 Organization

Scope: The effort's management organizational structure.

Customer Perspective: Examine the project and program management teams (i.e., customer's and supplier's) organizational structure. Contrast the strengths and weaknesses of the structure. Assess whether the organizational structure is acceptable.

Supplier Perspective: Examine the project and program management teams (i.e., supplier's and subcontractors') organizational structure. Contrast the strengths and weaknesses of the structure. Assess the impact of changes to the management structure.

5.3.2 Suitability

Scope: The project and program management teams.

Customer Perspective: Examine the project and program management teams (i.e., the customer's and supplier's). Evaluate the capability of the management teams to successfully implement the effort. Assess whether the management teams are capable.

Supplier Perspective: Examine the project and program management teams (i.e., supplier and subcontractors). Evaluate the capability of the management team to successfully implement the effort. Assess the impact of changing the management team.

5.3.3 Change Tolerance

Scope: The ability of the effort to manage changes in the day-to-day working environment.

Customer Perspective: Examine the risk, problem and change management procedures in place. Evaluate their comprehensiveness. Assess the procedures' capability to handle both routine and unplanned changes. Assess whether the effort's capability to manage change is acceptable.

Supplier Perspective: Examine the risk, problem, change, requirements, rework and configuration management procedures. Evaluate their comprehensiveness. Assess procedures' capability to handle both routine and unplanned changes.

5.4 Contracting and Subcontracting

Scope: This issue concerns how the contractual process influences the effort.

5.4.1 Conditions/Constraints

Scope: The contractual constraints placed on the effort determined by the general terms and conditions. Items such as contract type (e.g., payment terms and contractual requirements), restrictions (e.g., conditions or directives imposed) and dependencies (e.g., use of products outside of direct control) should be considered.

Customer Perspective: Examine the effort's contracts. Evaluate the responsibilities of the customer, divisibility of the contract, any substantial performance requirements, contract discharge requirements, and modification procedures. Assess whether the contractual requirements are adequate and necessary.

Supplier Perspective: Examine the effort's contracts. Evaluate the incentive structure, reporting of progress, rights in technical data and software, key personnel requirements, warranties, and any unusual restrictions. Assess the impact of the contract or changes to the contract on meeting the mission requirements.

5.4.2 Cost Accounting

Scope: The effort's cost monitoring and control system, e.g., the WBS.

Customer Perspective: Examine the effort's cost monitoring and control system. Evaluate the completeness, timeliness and accuracy of the system. Evaluate the interoperability of cost data among stakeholders. Assess whether the cost accounting system is acceptable.

Supplier Perspective: Examine the effort's cost monitoring and control system. Evaluate the completeness, timeliness and accuracy of the system. Evaluate the interoperability of cost data among supplier and subcontractors. Assess the impacts of change to the cost accounting system.

5.4.3 Progress Tracking

Scope: The contract process.

Customer Perspective: Examine the contracting process. Evaluate the process and mechanisms for tracking the progress of the contract. Assess whether the tracking process is acceptable.

Supplier Perspective: Examine the contracting process. Evaluate the process and mechanisms for tracking the progress of the contract. Assess the impacts of changing the contract tracking process.

5.4.4 Arrangements

Scope: The contract team.

Customer Perspective: Examine the effort's supplier team. Evaluate the contractual arrangements between the customer and the supplier, and the suppliers themselves. Assess whether the contract arrangements are acceptable.

Supplier Perspective: Examine the effort's supplier team. Evaluate the contractual arrangements. Contrast the contracted mix and balance of the team's expertise against the effort's requirements (e.g., who is responsible for specific technical expertise). Assess the impacts of changing the team's mix.

5.4.5 Timeliness

Scope: The contractual process.

Customer Perspective: Examine the contractual process. Evaluate how timely the contract conditions are negotiated. Assess whether the time taken is acceptable.

Supplier Perspective: Examine the contractual process. Evaluate how timely the contract conditions are negotiated. Assess how much "at risk" work can be sustained. Assess the impact of changes in negotiation time.

5.4.6 Change Management

Scope: The contract process.

Customer Perspective: Examine the contractual process. Evaluate how easily contract conditions contracts can be modified and under what conditions. Assess whether the capability to modify the contract is acceptable.

Supplier Perspective: Examine the contractual process. Evaluate how easily contract conditions contracts can be modified and under what conditions. Assess the flexibility of the contract. Assess the impacts of modifying the contract.

5.5 Communication

Scope: This issue concerns the communication processes that exists; the level of openness; the trust among the effort's stakeholders; how communication among the stakeholders influences the effort.

5.5.1 Interfaces

Scope: The communication interfaces among the effort's stakeholders.

Customer Perspective: Examine the communication interfaces among the stakeholders and other relevant programs/projects (e.g., projects that the effort must interface with). Evaluate the complexity of the communication process across these interfaces. Assess the loss or miscommunication across these interfaces. Evaluate the time it takes for information to be communicated. Assess whether the communication interfaces are acceptable.

Supplier Perspective: Examine the communication interfaces among the stakeholders. Evaluate the complexity of the communication process across these interfaces. Assess the loss or miscommunication across these interfaces. Evaluate the time it takes for information to be communicated (e.g., receiving direction from or review of information by the customer). Assess the impact of changing the communication interfaces.

5.5.2 Openness

Scope: The communication process among the effort's stakeholders.

Customer Perspective: Examine the communication process that exists within the customer's organization, to and within the supplier, and any other programs/projects the effort must communicate with. Evaluate the degree to which information is or can be shared openly. Assess the impediments and disincentives to openly sharing information. Assess whether the openness of communications is sufficient.

Supplier Perspective: Examine the communication process among the stakeholders, within internal teams (e.g., IPTs), and within individual supplier organizations. Evaluate the degree to which information is or can be shared openly. Assess the impediments and disincentives to openly sharing information. Assess the impact of changing the openness of communications.

5.5.3 Teamwork

Scope: The ability of the personnel assigned to the effort to work together as a team.

Customer Perspective: Examine the teaming arrangements and work groups (e.g., IPTs). Evaluate how well the teams cooperate and coordinate activities. Assess the how much the effort depends on successful teamwork. Assess the impact of any conflicts. Assess whether the level of teamwork is acceptable.

Supplier Perspective: Examine the teaming arrangements and work groups (e.g., IPTs). Evaluate how well the teams cooperate and coordinate activities. Assess the impacts of changes in teamwork.

6. Technical Process

Scope: This issue category concerns the value, utility and capability to implement the technical processes that are being used within the effort.

6.1 Conformance

Scope: This issue concerns the conformance with a defined or standard process being used to prototype, develop, operate and/or improve the effort's product during one or more life cycle phases, e.g., R&D, development, production and manufacturing, operation and maintenance.

6.1.1 Compliance

Scope: The production, development, operational, etc., processes, steps, methods and supporting tools used on the effort.

Customer Perspective: Examine the compliance of the processes used on the effort. Compare and contrast these against known standards (e.g., the CMM). Assess how processes that become "out-of-compliance" are made compliant. Assess whether level of compliance is acceptable.

Supplier Perspective: Examine the compliance of the processes used on the effort. Compare and contrast these against known standards (e.g., the CMM). Assess how processes that become "out-of-compliance" are made compliant. Assess the impact of changes in compliance.

6.1.2 Performance Consistency

Scope: The production, development, operational, etc., processes, steps, methods and supporting tools used on the effort.

Customer Perspective: Examine the actual usage of the approved processes used on the effort by the stakeholders. Assess how well the process is followed in practice. Assess whether level of performance consistency is acceptable.

Supplier Perspective: Examine the actual usage of the approved processes used on the effort. Assess how well the process is followed in practice by the supplier and subcontractors. Assess the impact of deviations from performance consistency.

6.1.3 Process Consistency

Scope: The production, development, operational, etc., processes, steps, methods and supporting tools used on the effort.

Customer Perspective: Examine the actual usage of the approved processes used on the effort by the stakeholders. Assess how consistent each process is among stakeholders (e.g., are defects or lines of code counted in the same manner).. Assess whether level of process consistency is acceptable.

Supplier Perspective: Examine the actual usage of the approved processes used on the effort. Assess how well consistent the process is among the supplier and subcontractors. Assess the impact of process inconsistencies.

6.2 Capability

Scope: This issue concerns the overall effectiveness of processes being used to prototype, develop, operate and/or improve the effort's product during one or more life cycle phases, e.g., R&D, development, production and manufacturing, operation and maintenance.

6.2.1 Fitness for Purpose

Scope: The production, development, operational, etc., processes, steps, methods and supporting tools used on the effort.

Customer Perspective: Examine the utility of the processes used on the effort. Evaluate how well suited and/or capable the processes are for supporting the effort. Assess whether the processes used are acceptable and adequate.

Supplier Perspective: Examine the utility of the processes used on the effort. Evaluate how well suited and/or capable the processes are for supporting the effort. Assess whether the processes used are adequate. Assess the impact of changes to the processes.

6.2.2 Efficiency

Scope: The production, development, operational, etc., processes, steps, methods and supporting tools used on the effort.

Customer Perspective: Examine the productivity of the processes used on the effort. Contrast productivity against similar efforts. Assess the degree of process concurrency/overlap. Assess whether the productivity is acceptable.

Supplier Perspective: Examine the productivity of the processes used on the effort. Contrast productivity against similar efforts. Assess the degree of process concurrency/overlap. Assess the impact of changes in productivity.

6.2.3 Improvement

Scope: The production, development, operational, etc., processes, steps, methods and supporting tools used on the effort.

Customer Perspective: Examine the processes used on the effort. Evaluate how they are (to be) improved over time. Assess whether the improvement process is acceptable.

Supplier Perspective: Examine the processes used on the effort. Evaluate how they are improved over time. Assess the impact of changes in the improvement process.

7. Technical Product

Scope: This issue category concerns the characteristics of the product(s)/services being developed or maintained by the effort.

7.1 Product Line

Scope: This issue concerns core attributes of the product being produced by the effort.

7.1.1 Architecture

Scope: The effort's products and supporting infrastructure.

Customer Perspective: Examine architectural design and implementation of the product and supporting infrastructure. Evaluate their robustness and tolerance to change (e.g., can new functionality be added easily). Assess whether the architecture of the product and infrastructure are acceptable.

Supplier Perspective: Examine architectural design and implementation of the product and supporting infrastructure. Evaluate their robustness and tolerance to change. Assess the impacts of changes to the architecture.

7.1.2 Scale

Scope: The effort's products and supporting infrastructure.

Customer Perspective: Examine the effort's products and infrastructure. Evaluate the capability to scale these up or down over time (e.g., can data throughput be increased easily). Assess whether the capability for scaling is acceptable.

Supplier Perspective: Examine the effort's products and infrastructure. Evaluate the capability to scale these up or down over time. Assess the impacts of changes in the capability to scale the product or infrastructure.

7.1.3 Complexity

Scope: The effort's products and supporting infrastructure.

Customer Perspective: Examine the effort's products and infrastructure. Evaluate their complexity (e.g., coupling, cohesion, number of interfaces, communication protocols, etc.) both individually and together. Assess the impact of this complexity on the effort. Assess whether the level of complexity is acceptable.

Supplier Perspective: Examine the effort's products and infrastructure. Evaluate their complexity (e.g., coupling, cohesion, number of interfaces, communication protocols, etc.) both individually and together. Assess the impact of changes to the level of complexity.

7.1.4 Technology Effectiveness

Scope: The effort's products and supporting infrastructure.

Customer Perspective: Examine the effort's products and infrastructure technologies. Assess the ability to recognize the need for technology infusion. Evaluate the ability to use new technology. Assess whether the degree of technology effectiveness is acceptable.

Supplier Perspective: Examine the effort's products and infrastructure technologies. Compare and contrast their the timeliness and effectiveness of the technology with respect to the effort's objectives and overall mission requirements. Assess the ability to predict, plan for and utilize technology to its potential. Assess the impact of changes in technology effectiveness.

7.1.5 Interoperability

Scope: The effort's products and supporting infrastructure.

Customer Perspective: Examine the product and supporting infrastructure. Evaluate their interoperability requirements with other systems. Assess their interoperability maturity/readiness. Assess whether the interoperability of the product is acceptable.

Supplier Perspective: Examine the product and supporting infrastructure. Evaluate their interoperability requirements with other systems. Assess their interoperability maturity/readiness. Assess the impact of changes to product capability.

7.2 Product Requirements

Scope: **This issue concerns the characteristics of the requirements imposed on the effort's product.**

7.2.1 Completeness

Scope: The product and support requirements.

Customer Perspective: Examine the product and support requirements. Evaluate their completeness in depth and breadth. Assess the traceability of the requirements to mission requirements. Assess whether the degree of completeness is acceptable.

Supplier Perspective: Examine the product and support requirements. Evaluate their completeness in depth and breadth. Assess the impact of changes in requirement completeness.

7.2.2 Correctness

Scope: The product and its support requirements.

Customer Perspective: Examine the product and support requirements. Evaluate their correctness. Assess whether the level of acceptability is acceptable.

Supplier Perspective: Examine the product and support requirements. Evaluate their correctness. Assess the impact of changes in requirements' correctness.

7.2.3 Feasibility

Scope: The product and support requirements.

Customer Perspective: Examine the product and support requirements. Evaluate their feasibility. Assess whether their level of feasibility is acceptable.

Supplier Perspective: Examine the product and support requirements. Evaluate their feasibility. Assess the impact of changes on requirement feasible.

7.2.4 Stability

Scope: The product and support requirements.

Customer Perspective: Examine the product and support requirements. Evaluate their likelihood of changing. Assess whether the stability of the requirements is acceptable.

Supplier Perspective: Examine the product and support requirements. Evaluate their likelihood of changing and the capability of the requirements change-management process to highlight unplanned requirements changes (e.g., requirements creep). Assess the impact of changes to the stability of the requirements.

7.3 Quality

Scope: This issue concerns the fitness for use of the effort's product.

7.3.1 Usability

Scope: The product and its (proposed) operation.

Customer Perspective: Examine the product and its (proposed) operation. Evaluate its likelihood of meeting user needs and expectations. Evaluate the level of complexity required in its operation. Evaluate the training requirements and the training supplied. Assess whether the quality acceptable level.

Supplier Perspective: Examine the product and its (proposed) operation. Evaluate its likelihood of meeting user needs and expectations. Evaluate the level of complexity required in its operation. Evaluate the training requirements and the training supplied. Assess the impacts of changes to product usability.

7.3.2 Technical Performance

Scope: The technical performance/functional correctness required of the software/system products, e.g., speed, size, bandwidth, and integration with related systems or components.

Customer Perspective: Examine the effort's technical requirements and degree of functional correctness at this point in the effort. Compare and contrast with current capability. Assess whether targeted performance and actual performance are acceptable.

Supplier Perspective: Examine the effort's technical requirements and degree of functional correctness at this point in the effort. Compare and contrast with current capability. Assess impacts of any shortfall in targeted performance. Assess impacts of any changes in targeted or actual performance.

7.3.3 Dependability/Reliability/Availability

Scope: The product and its (proposed) operation.

Customer Perspective: Examine the product and its supporting infrastructure. Contrast the dependability/reliability/availability of the technology used against the their respective targets. Assess whether the dependability/reliability/availability is acceptable.

Supplier Perspective: Examine the product and its supporting infrastructure. Contrast the dependability/reliability/availability of the technology used against the their respective targets. Assess the impacts of changes to the dependability/reliability/availability targets.

7.3.4 Supportability/Maintainability

Scope: The product and its supporting infrastructure.

Customer Perspective: Examine the product and its supporting infrastructure. Contrast the level of supportability/maintainability in operation against technical/mission requirements. Assess whether the level of supportability/maintainability is acceptable.

Supplier Perspective: Examine the product and its supporting infrastructure. Contrast the level of supportability/maintainability in operation against technical/mission requirements. Assess the impact of changes in maintainability.

7.3.5 Reusability

Scope: The product and its supporting infrastructure.

Customer Perspective: Examine the product and its supporting infrastructure. Evaluate their technology, design, architecture, etc., for reusability, and contrast the level of reusability against reusability targets. Assess the reusability policy for impacts on schedule, cost, reliability, etc. Assess whether the amount of reusability is acceptable.

Supplier Perspective: Examine the product and its supporting infrastructure. Evaluate their technology, design, architecture, etc., for reusability, and contrast the level of reusability against reusability targets. Assess the reusability policy for impacts on schedule, cost, reliability, etc. Assess the impact of changes in the level of reusability.

7.3.6 Portability

Scope: The product and its supporting infrastructure.

Customer Perspective: Examine the product and supporting infrastructure. Assess the length of time the product will likely remain on the current technology. Evaluate

the ease of their execution using different technology. Assess whether the degree of portability is acceptable.

Supplier Perspective: Examine the product and supporting infrastructure. Evaluate the ease of their execution on different technology. Assess the impact of having to change the porting of the product or infrastructure.

7.3.7 Efficiency

Scope: The product and its supporting infrastructure.

Customer Perspective: Examine the product and its supporting infrastructure. Evaluate their technology, design, architecture, etc., for efficiency of use (e.g., impacts on throughput, utilization, and timing constraints) and contrast the level of efficiency achieved against targets. Assess whether the amount of level of efficiency is acceptable.

Supplier Perspective: Examine the product and its supporting infrastructure. Evaluate their technology, design, architecture, etc., for efficiency of use and contrast the level of efficiency achieved against targets. Assess the impact of changes in the level of efficiency.

7.4 Product Risk

Scope: This issue concerns the risks inherent within the development or operation of the effort's product or the product itself

7.4.1 Human Factors

Scope: The product and its supporting infrastructure.

Customer Perspective: Examine the product and its supporting infrastructure. Evaluate both for their consideration of human factors. Evaluate the human factor requirements and their impacts on ease of use, ease of learning, ease of remembering, etc. Assess whether the consideration of human factors of the effort are acceptable.

Supplier Perspective: Examine the product and its supporting infrastructure. Evaluate both for their consideration of human factors. Evaluate the human factor requirements and their impacts on ease of use, ease of learning, ease of remembering, etc. Assess the impact of changes to the human factors aspects of the effort.

7.4.2 Safety

Scope: The product, its supporting infrastructure, and the processes used to manage, develop or support the product.

Customer Perspective: Examine the product, its supporting infrastructure, and the processes used to manage, develop or support the product. Evaluate each for safety requirements. Assess whether the consideration of safety requirements is acceptable.

Supplier Perspective: Examine the product, its supporting infrastructure, and the processes used to manage, develop or support the product. Evaluate each for safety requirements. Assess whether the safety requirements are acceptable. Assess the impact of changes to the safety requirements on the effort

7.4.3 Security

Scope: The product, its supporting infrastructure, and the processes used to manage, develop or support the effort.

Customer Perspective: Examine the product, its supporting infrastructure, and the processes used to manage, develop or support the product. Evaluate each for security requirements. Assess whether the security requirements are acceptable. Assess whether the consideration of security requirements is acceptable.

Supplier Perspective: Examine the product, its supporting infrastructure, and the processes used to manage, develop or support the product. Evaluate each for security requirements. Assess whether the security requirements are acceptable. Assess the impact of changes to the security requirements on the effort.

8.0 Schedule

Scope: This issue category concerns the ability to develop a realistic schedule that fully considers resource usage and availability.

8.1 Progress

Scope: This issue concerns the capability of the effort to make progress.

8.1.1 Estimation Accuracy

Scope: The past and current schedules and estimation process.

Customer Perspective: Examine past and current schedules and estimation process. Evaluate the accuracy of the schedules, including how often the schedule requires re-estimation. Assess the degree to which the current schedule is inaccurate and how the estimation process contributes to the inaccuracy. Assess whether the schedule is acceptable.

Supplier Perspective: Examine past and current schedules and estimation process. Evaluate the accuracy of the schedules, including how often the schedule requires re-estimation. Assess the degree to which the schedule is inaccurate. Assess how estimation inaccuracy is used to improve the estimation process. Assess the impact of schedule or process changes.

8.1.2 Visibility

Scope: The current schedule and estimation process.

Customer Perspective: Examine the current schedule and estimation process. Evaluate how much schedule process detail is visible among all the stakeholders. Assess how timely the schedule information is reported, especially deviations from schedule. Assess whether the schedule visibility is acceptable.

Supplier Perspective: Examine the current schedule. Evaluate how much schedule detail is visible among all the stakeholders. Assess how timely the schedule information is reported, especially deviations from schedule. Assess the impacts of changing the level of visibility into the schedule.

8.1.3 Progress Performance

Scope: The past and current schedules of the stakeholders.

Customer Perspective: Examine the past and current schedules. Evaluate the actual schedule against planned progress targets (e.g., milestones, reviews, earned value). Assess whether the actual schedule progress meets expected progress. Assess whether the progress made is acceptable.

Supplier Perspective: Examine the past and current schedules. Evaluate the actual schedule against planned progress targets. Assess whether the actual schedule progress meets expected progress. Assess the impacts of a change in actual or expected progress.

8.1.4 Rework

Scope: The past and current schedules and estimation processes of the stakeholders.

Customer Perspective: Examine the past and current schedules. Evaluate the number of schedule deviations due to unplanned rework (e.g., technology failure, changes in mission requirements, vendor/supplier delays, staffing issues, etc.). Assess the likelihood of the amount of planned rework being inaccurate. Assess how the estimation process accounts for rework. Assess whether the amount of rework is acceptable.

Supplier Perspective: Examine the past and current schedules. Evaluate the number of schedule deviations due to unplanned rework. Assess the likelihood of the amount of planned rework being inaccurate. Assess how the estimation process accounts for rework. Assess the impacts of a change in rework.

8.2 Dependencies

Scope: This issue concerns the effects of dependencies (technical, schedule, personnel, etc.) upon the effort.

8.2.1 Complexity

Scope: The schedule, contractual arrangements and product and infrastructure design.

Customer Perspective: Examine the schedule, contractual arrangements and product and infrastructure design. Evaluate the number and types of dependencies and couplings and their rate of change. Assess the level of complexity, its manageability and impacts on the effort. Assess whether the level of complexity is acceptable.

Supplier Perspective: Examine the schedule, contractual arrangements and product and infrastructure design. Evaluate the number and types of dependencies and couplings. Assess the level of complexity, its manageability and its impacts on the effort. Assess the impacts of changes in complexity.

8.2.2 Contingency

Scope: The past and current schedules of the stakeholders.

Customer Perspective: Examine the past and current schedules. Evaluate existing schedule dependencies (e.g., delivery of a critical item by a third-party supplier or an interface with another system outside of the effort's control). Assess whether the degree of schedule dependency and contingency action plans made are acceptable.

Supplier Perspective: Examine the past and current schedules. Evaluate the existing schedule dependencies. Assess whether the degree of schedule dependency and contingency action plans made are acceptable. Assess the impacts of a change in schedule dependency.

9. User/Customer

Scope: This issue category concerns those items that support the user or customer of the product developed by the effort.

9.1 Satisfaction

Scope: This issue concerns the level of customer and/or user satisfaction that exists with the products developed or services provided by the stakeholders during the effort.

9.1.1 Involvement

Scope: The user/customer interface to the effort.

Customer Perspective: Examine user/customer interface to the effort. Evaluate how well the user and customer are consulted on the product's specification, design, testing and overall progress. Assess how well the user and customer are involved. Assess whether the level of consultation is acceptable.

Supplier Perspective: Examine user/customer interface to the effort. Evaluate how well the user and customer are consulted on the product's specification, design, testing and overall progress. Assess how well the user and customer are involved. Assess the impact of changes to the level of consultation.

9.1.2 Usability

Scope: The product and its relationship to its users.

Customer Perspective: Examine the product. Evaluate how well the product meets the mission requirements. Assess how well it meets the users' needs and expectations. Assess whether the level of product utility/usability is acceptable.

Supplier Perspective: Examine the product. Evaluate how well it meets the contractual requirements. Assess whether it meets the mission requirements. Assess how well the product meets the users' needs and expectations. Assess the impact to a change in utility/usability

9.2 Transition

Scope: The transition support provided to the users of the products or services acquired, developed or supported by the effort.

9.2.1 Transition Support

Scope: The transition support plan and implementation.

Customer Perspective: Examine the transition support plan and (proposed) implementation provided to the users. Evaluate whether the transition plan is complete and is adequately supported. Assess whether the level of transition support is acceptable.

Supplier Perspective: Examine the transition support plan and (proposed) implementation provided to the users and customer. Evaluate whether the transition plan is complete and is adequately supported. Assess the impacts of changes to the level of transition support.

9.2.2 Training

Scope: The training program.

Customer Perspective: Examine the training program. Evaluate the training curriculum, supporting material and equipment. Assess both the depth and breadth of the training program and instructor expertise. Assess the training program for timeliness. Assess whether the training program is acceptable.

Supplier Perspective: Examine the training program. Evaluate the training curriculum, supporting material and equipment. Assess the comprehensiveness of the training program and instructor expertise. Assess the training program for timeliness. Assess the impact of changes to the training program.

10. Project Specific

Scope: New issues not covered.

Customer Perspective: Examine the issue from a customer's perspective.

Supplier Perspective: Examine the issue from a supplier's perspective.